Art. Nr. # 22327 Version 0803

P+S TECHNIK
Professional Cine Equipment Manufacture

PRO35®
Image Converter

User Manual

for PRO35 2/3" and PRO35 1/2" Cameras
Model MKII

ENGLISH

Before operating this product, please read the instruction carefully and save this manual for future use.

Manufacturer Information:

The manufacturer of this product is
P+S Technik GmbH
Siemensstraße 12
85521 Ottobrunn / Munich
Germany.

Please find worldwide authorised representation and dealer on our homepage **http://www.pstechnik.de** or send an e-mail to **info@pstechnik.de** asking for the contact details.

Concerning any service and warranty requests, please contact your distributor or P+S Technik GmbH directly.

Safety instructions:

Temperature range:
The Image Converter has been tested for a temperature range from 0°C to +50°C. For field reports regarding more extreme temperatures please contact P+S Technik Technical Support info@pstechnik.de

Maintenance / Special Tools:
Do not touch glass components with sharp objects.For cleaning do only use special lens cleaning supplies. Refer all servicing to qualified service personnel.

Storage:
Please store the Image Converter in a dry and dust free place.

Disposal:
Please dispose broken components and devices correctly.

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1.1 Delivery Content:

❶ PRO35 Image Converter
Lens Mount: PL Mount (for other Mounts see accessories)
Camera-Mount: 2/3" B4 Mount, 1/3" Bayonet Mount
Lens caps front and back

❷ 15 mm Lightweight Support Bridge with
2x 15 mm rods 75 mm
2x 15 mm rods 240 mm

❸ Power cable to lens connector

❹ Altogether in a wooden box for safe transport
(it is offered an aluminium box as an optimal accessory

⚠ The lightweight support bridge for mounting onto the camera or the quick-lock plate has to be acquired separately.

+++ SEE ALSO LENS SETS FROM P+S TECHNIK **http://www.pstechnik.de** +++

1.2 Accessories and Spare Parts:

Art. No.	Description
19004	PRO35 PL-Mount Image Converter for 2/3" B4-Mount camera incl. light weight support (#19186), power supply cable for lens connector
14000	PRO35 PL-Mount Image Converter for 1/2" CCD cameras incl. light weight support (#19186), power supply cable for lens connector

Lens Mounts for PRO35

20737	BNC-R Mount for PRO35
19940	Panavision Mount for PRO35 Professional F Mount for PRO35 (#23504)
19942	Nikon Mount for PRO35
20468	Canon EF-Mount for PRO35
22652	Canon FD-Mount for PRO35
20902	Contax Mount for PRO35

Support accessories by P+S TECHNIK

19376	PRO35 support bridge for 19 mm to 19 mm rods
19710	PRO35 support bridge for 19 mm to 15 mm rods
19715	PRO35 support bridge for 15 mm to 15 mm rods
16251	Pair of rods for bridge plate, 19 mm, L=440 mm, steel
19545	Pair of rods for bridge plate, 19 mm, L=440 mm, carbon fiber
18688	Pair of rods for bridge plate, 19 mm, L=240 mm, steel
19544	Pair of rods for bridge plate, 19 mm, L=240 mm, carbon fiber

Cables and general accessories

22612	PRO35 power supply cable for “Lens” connector (Hirose 12-pin/ Fischer 7-pin, angled connector) (with twist protection MK II)
19142	PRO35 power supply cable Anton Bauer 2-pin (with twist protection MKII)
19143	PRO35 power supply cable Digibeta Hirose 4-pin (with twist protection MKII)
19144	PRO35 power supply cable XLR 4-pin (with twist protection MKII)
19187	PRO35 power supply cable XLR 5-pin (with twist protection MKII)
19188	PRO35 power supply cable “open end” (with twist protection MKII)
20449	RS switch ON / OFF (to use with MINI35 and PRO35)
21067	RS switch holder complete (incl. RS switch holder, Cmotion fastener, RS extension cable 0,8 m)
21065	RS extension cable, 0,8 m

Support systems for use with the PRO35 Image Converter

There are four possible solutions, explained in the following:

1. 15 mm light weight support (by default delivered with the PRO35)
   – for use with normal (prime) lenses
   – for attachment of 15 mm light weight accessories

2. 15 mm light weigth support (ARRI based)

3. 19 mm heavy duty support – Chrosziel based
   – for use with heavy lenses (i. e. zoom lenses)
   – for attachment of 19 mm movie accessories

4. 19 mm heavy duty support – ARRI based
   – for use with heavy lenses (i. e. zoom lenses)
   – for attachment of 19 mm accessories

Support bridges to adapt from 19 mm ligth weigth support to 15 mm heavy duty support are available as well:

19710	PRO35 support bridge for 19 mm to 15 mm rods
19715	PRO35 support bridge for 15 mm to 15 mm rods

1. 15 mm Light-weight Support for the PRO35

The 15 mm support bridge and rods are included in the delivery. A holder for the 15 mm rods is required on the camera side. This holder is offered by both Chrosziel and ARRI and can be purchased directly from P+S Technik.

By default the PRO35 Image Converter is delivered with a 15 mm light weight support system, including a support bridge (3) and four 15 mm rods (4). It stabilizes the PRO35 setup and 15 mm accessories can be attached.

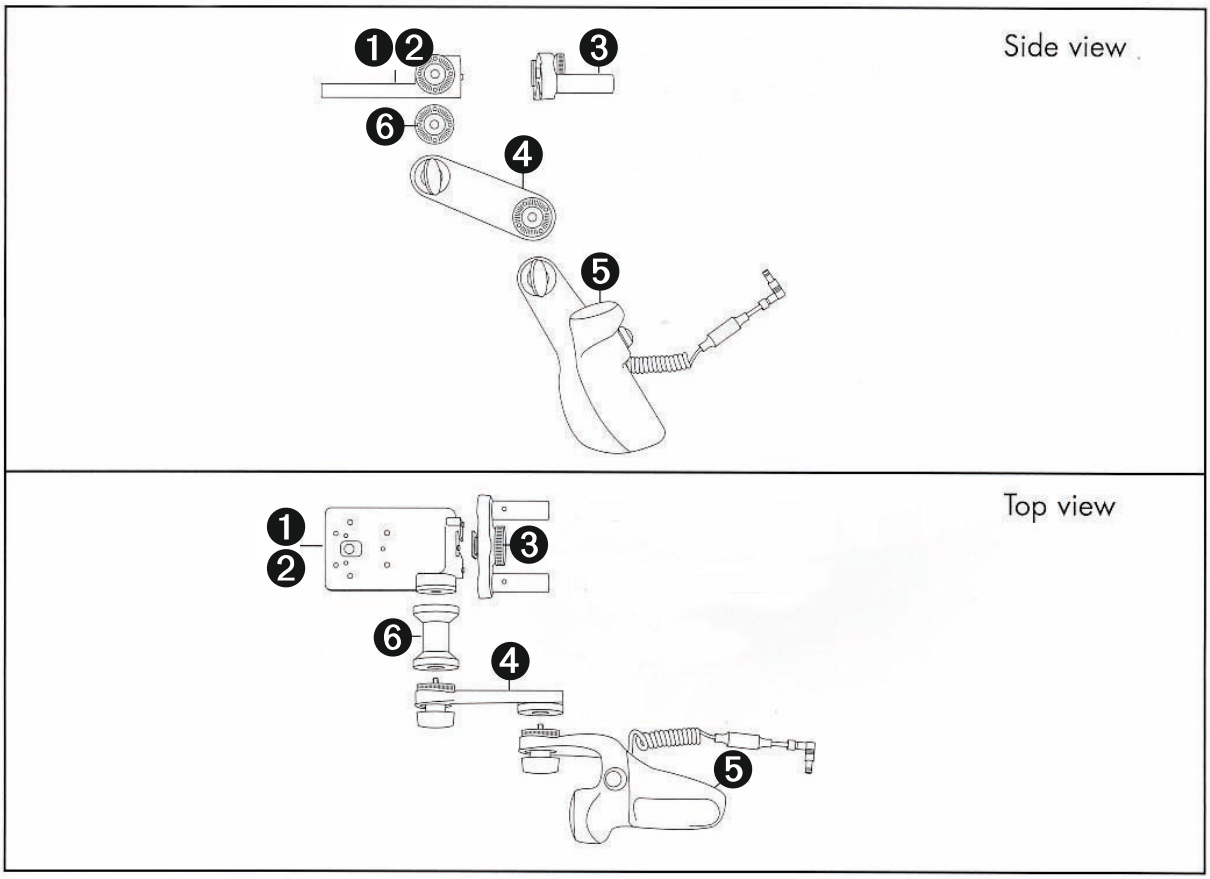
IMPORTANT: In order to connect the light weight support to your video camera you need a holder plate for 15 mm rods on camera side, which is prepared for light weight support connection. This holder is possible to purchase directly from P+S Technik.

Art. No.	Description
	Holder Plate from ARRI or Chrosziel. The ARRI light weight support for video cameras is based on the LWS-4. Light weight supports for Sony, Ikegami, JVC, Hitachi, Philips, Thomson available.
	Quicklock plate (has to be compatible to your base plate)
	Support bridge (comes with the PRO35) (#19004)
	Four 15 mm rods (come with the PRO35): 75 mm (two times) for the support of the Image converter and 240 mm (two times) for additional movie accessories (#19004)
19004	PRO35 Image Converter

+++ All products can be ordered by P+S Technik in Munich or through our local dealers +++

2. Light Weight Support for the PRO35 Image Converter (ARRI based)

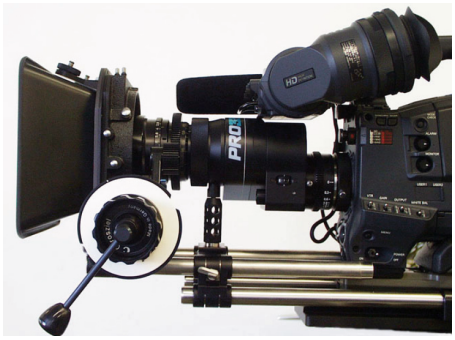
The following accessories are based on the ARRI LWS-4 and ARRI light-weight adapter plates for the SONY, PANASONIC and Thomson cameras and allows you to fit additional accessories, such as follow focus, mattebox....
based on the LWS 15 mm support. A special support bridge for the PRO35Digital is included in the delivery of the Image Converter:

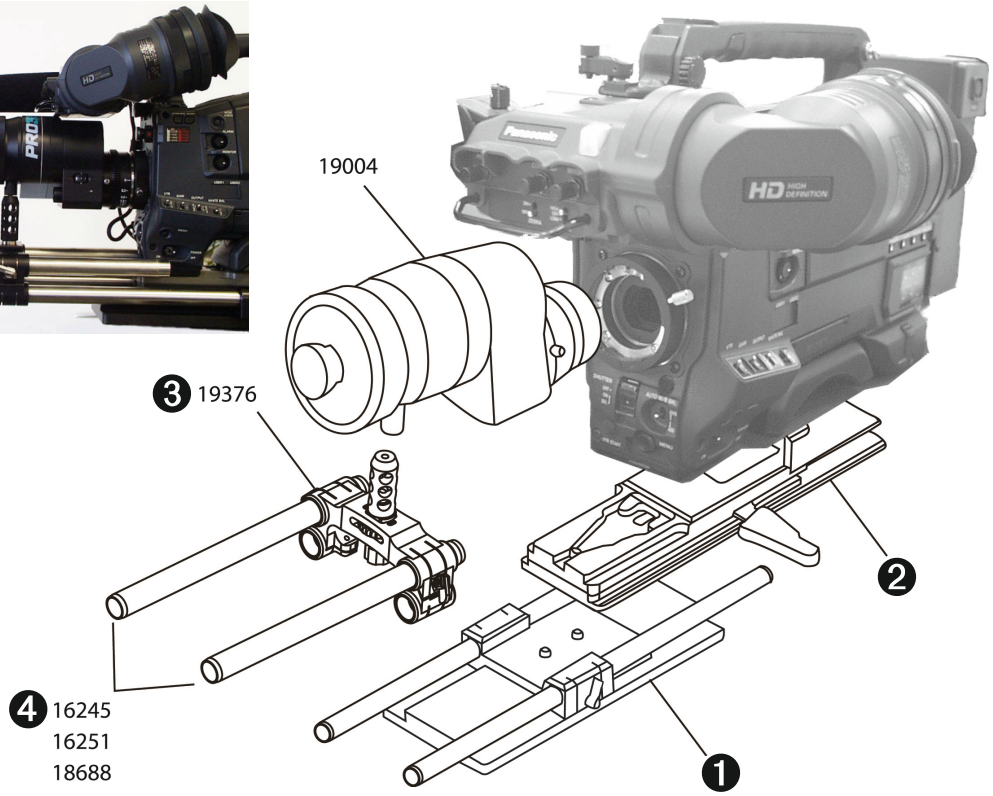


	Art. No.	Description
❶	19548	Sony Ligth Weigth Adapter SLB-2
❷	19547	Panasonic Ligth Weigth Adapter PLB-2
❸	21958	Ligth Weigth Support LWS-4; compete with 15 mm rods (97 mm and 170 mm long)
❹	19590	Hand Grip Extension
❺	16167	Hand Grip with ON/OFF Switch
❻	19591	Hand Grip Extension

3. 19 mm Heavy Duty Support for the PRO35 (Chrosziel based setup)

The following table and drawings describe, which articles are necessary for a Chosziel based heavy duty support setup in order to use heavy lenses (like zoom lenses) or to connect 19 mm heavy duty based accessories to your PRO35 setup.





	Art. No.	Description
❶	18478	Bridge plate for 19 mm rods for Sony and Panasonic video cameras incl. 440 mm rods (Chrosziel)
❷	18477	Quicklock plate for Sony and Panasonic video cameras (Chrosziel)
❸	19376	PRO35 support bridge for 19 mm rods (without rods)
❹	16245	Pair of spare rods for bridge plate 19 mm x 650 mm
	16251	Pair of spare rods for bridge plate 19 mm x 440 mm
	19545	Pair of spare rods for bridge plate 19 mm x 440 mm (carbon fibre)
	18688	Pair of spare rods for bridge plate 19 mm x 240 mm
	19544	Pair of spare rods for bridge plate 19 mm x 240 mm (carbon fibre)

+++ All products can be ordered from P+S Technik in Munich or through our local dealers.+++

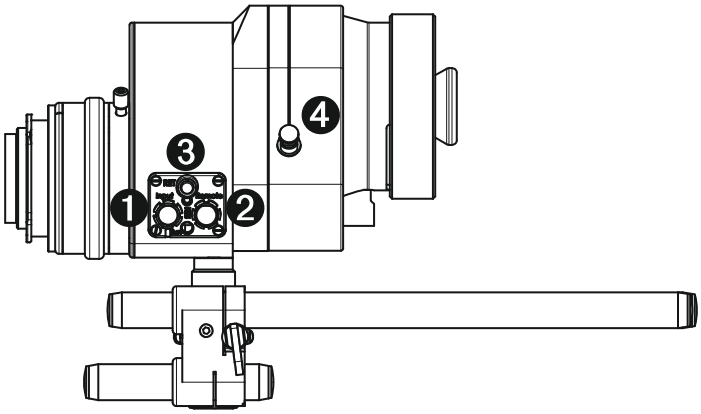
4. 19 mm Heavy Duty Support for the PRO35 (ARRI based setup)

The following table and drawings describe, which articles are necessary for an ARRI based heavy duty support setup in order to use heavy lenses (like zoom lenses) or to connect 19 mm heavy duty based accessories to your PRO35 setup.

Art. No.	Description
16198	Bridge plate for S16 / N16 cameras (BP-6 compatible) incl. 19 mm rods 440 mm (or original BP-6 by ARRI)
19570	Sony adapter plate SAP-3 (replaces Sony quick release plate) enabling interface to BP-6 bridge plate
18047	Panasonic adapter plate PAP-2 enabling interface to BP-6 bridge plate
17995	Thomson adapter plate TAP-1 enabling interface to BP-6 bridge plate
19376	PRO35 support bridge for 19 mm rods (without rods)
16245	Pair of spare rods for bridge plate 19 mm x 650 mm
16251	Pair of spare rods for bridge plate 19 mm x 440 mm
19545	Pair of spare rods for bridge plate 19 mm x 440 mm (carbon fibre)
18688	Pair of spare rods for bridge plate 19 mm x 240 mm
19544	Pair of spare rods for bridge plate 19 mm x 240 mm (carbon fibre)

+++ All products can be ordered from P+S Technik in Munich or through our local dealers +++

1.3 General Overview:

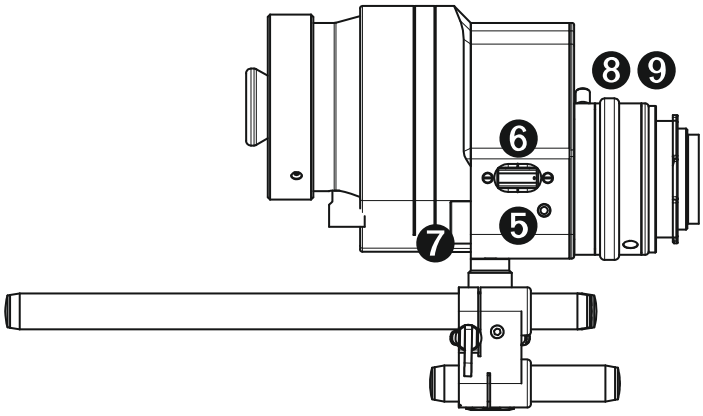


❶ INPUT – power connection

❷ REMOTE connector

❸ Return button

❹ Image Plane
(Line and Tape Hook)



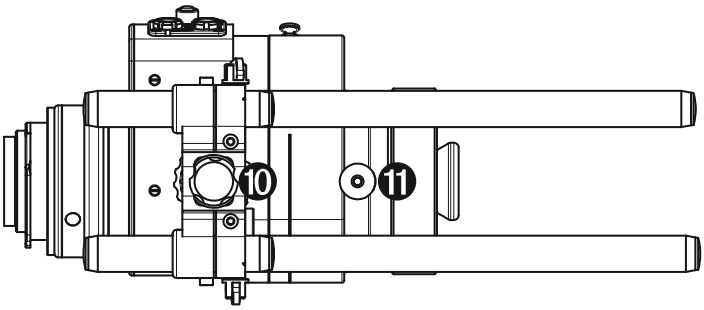
❺ Control LED:
GREEN – Good speed control
RED – acceptable / low speed
BLINKING – ERROR
(below minimum speed)

❻ Speed Control wheel

❼ Manual RUN
⚠ Does NOT start the shooting!

❽ Lever for back focus

❾ Iris diaphragm / ND Function
(adjustable ND Filter)

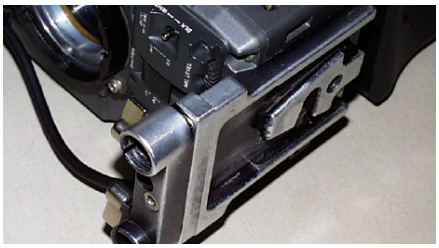
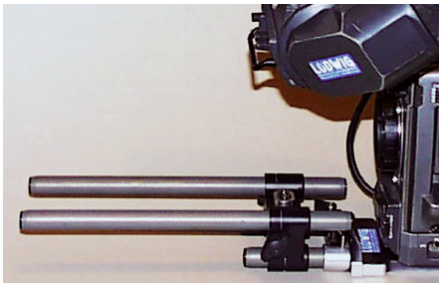
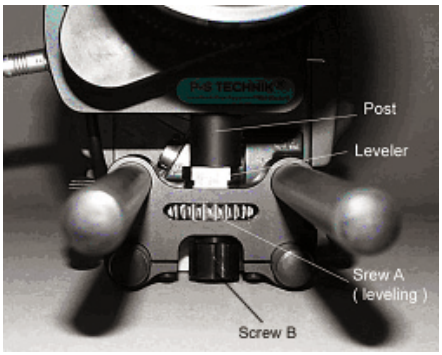


❿ Bottom 3/8 inch thread for Light weight support
(15 mm Lightweight Support)

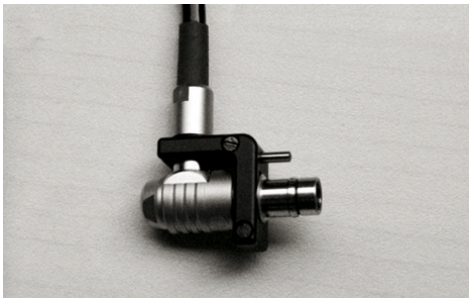
⓫ 3/8 inch thread for bridge plate support
(19 mm Heavy-Duty-Support)

2.1 Mounting the Image Converter:

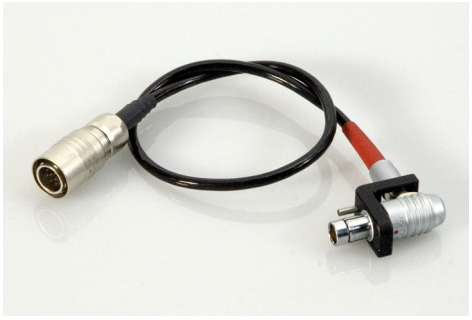
The following steps explain how to attach the PRO35 properly to your camera:

	Instruction	Explanatory Notes
1	Make sure that the quick-lock plate holder for the 15 mm lightweight support is assembled to the bottom of the camera as shown in the photo.	
2	Assemble the support bridge delivered with the PRO35 on the quick-lock plate, as shown in the photo.	
3	Assemble the PRO35.	
3.1	Attach the post to the bottom of the PRO35 unit.	
3.2	Lower the support for easier installation (lever shown as Screw A in photo).	
3.3	Loosen two screws on either side of Screw B in photo. Like this the bridge can be adjusted if necessary. For adjusting the bridge loosen screws on the bottom.	
3.4	Install the PRO35 Image Converter on the camera and lock the clamp ring of the B4 Mount.	
3.5	Raise Screw A until post bears on precisely.	
3.6	Engage and tighten the knob B in the bottom of the post. Also tighten the two screws placed either side of Screw B.	

2.2 Power supply and cabling:



The Fischer-Angle-Plug is equipped with an additional clamp in order to avoid twisting and the hence resulting damage of the connector.
This is a standard for all currently delivered models of the PRO35. All previous models of the PRO35 can be upgraded or the twist protection can be removed easily.



The PRO35 Image Converter can be powered without any problems.
The unit includes the power cable #22612. From the lens-connector (Hirose 12 pin) on the camera power is supplied as well as a Start / Stop signal. This signal starts and stops the converter automatically (if supported by the camera manufacturer)

Other power cables are available from P+S Technik, however without Start / Stop function.

Increased charging rate at low temperature:

The typical consumption of the PRO35 is about 300 mA (at a temperature of 20 °C). At a temperature below 0 °C the consumption can increase up to 1 Ampere.

If the Image Converter is internally equipped with a locking device, the power supply and control of the PRO35 Image Converter is typically driven by the 12-pin Hirose (Lens Connector) of the video camera. Hence a overcharging of the camera is avoided; the Image Converter shuts down automatically if the power consumption is higher than 1 Ampere.

If the PRO35 is used under conditions, which anticipate high power consumption, the converter can be operated with an external power supply. This could be a direct cable connection from the camera battery to the PRO35 or the use of a second battery.
In this case the internal power supply can be bridged (switched off). This bridge can be brazed on the back of the connector plate.

⚠ This modification requires experiences in the service of the Image Converter.
Only qualified service technicians are allowed to do these modifications.
MARK MODIFIED SYSTEMS ACORDINGLY IN ORDER TO AVOID DAMAGES ON THE CAMERA!

⚠ P+S Technik give no warranty on modified systems!

2.3 Operating Elements of the Image Converter:

2.3.1 Start / Stop:

If the Image Converter has been started manually (RUN-Button ⑦) a pressure on the VTR-start button of the camera activates ONLY the recording; the Image Converter remains in RUN-Mode.

Manual "RUN" status	VTR signal	Result
OFF	VTR ON* VTR OFF	Image Converter ON Image Converter OFF
ON	VTR ON* VTR OFF	Image Converter ON Image Converter ON

* While the camera is recording, the RUN-Button ⑦ is not active

The Image Converter does NOT start automatically after changing battery or switching on/off the camera (this is not a failure, but it saves electricity and increases the lifetime of the mechanical components of the unit).

Check BEFORE shooting, whether the Image Converter:
a) is already running (manual start) or
b) is started automatically with the camera

Tip:
Start the shooting AND the Image Converter SAVELY with an external start/stop switch (e.g. with the P+S Technik RS switch #20449 or other compatible switches). Hence you can almost screen out that the Image Converter is not running during recording.

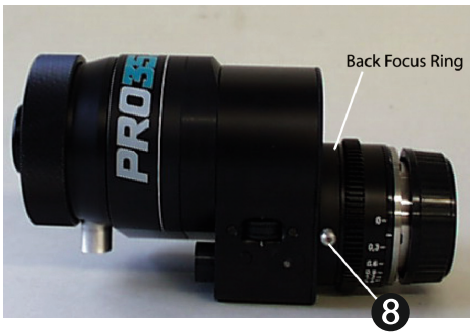
The utilization of the RS switch makes a simultaneous starting of PRO35 and camera possible.

2.3.2 Flange focal distance and Back focus:

There are two lens mounts on the PRO35 Image Converter: on the lens side (PL Mount, Nikon…) and on the camera side (Bayonet Mount). Hence there are two possibilities to adjust the flange focal distance:

1. The lens mount for the film and photo lenses (on the front of the Image Converter); has a preset flange focal distance, identical to film cameras.
   The flange focal distance on the lens mount (front) can be adjusted or collimated with an inferior flange or on a collimator (see also Service Manual for the PRO35 Image Converter)

2. The camera side Bayonet Mount of the PRO35 can be adjusted with the back focus screw:



Different than on film cameras the flange focal distance is NOT given respectively or is different in dependency from several factors.
The PRO35 offers naturally the possibility to adjust the flange focal distance. Therefore it can be used on every camera with adequate Bayonet Mount.

When is an adjustment of the camera side flange focal distance / back focus necessary?

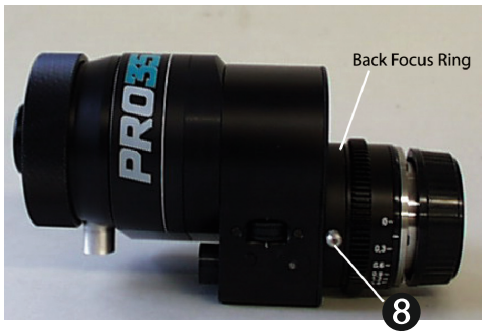
- In case of changing the camera
- In case of variation of temperature +/– 10 °C
- In case of high mechanical load onto the mount of the camera (heavy zoom lens or similar)
- After transportation of the unit respectively other heavy agitation.

How can the back focus be controlled and adjusted?

1. Adjusting back focus in preparation / test room:

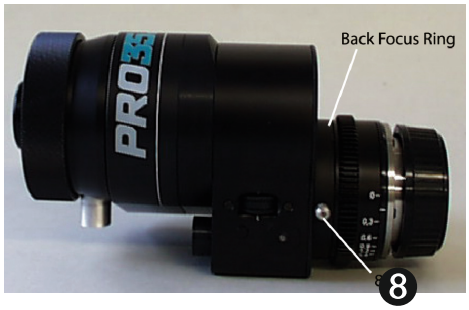
Check if the actually measured distance on the lens leads to a correct visual sharpness.

Beispiel: Place the test chart precise 3 m (or another, exact calibrated distance at the lens) distant from the image plane and adjust the measured distance at the lens. Check the result on a high-resolution monitor.

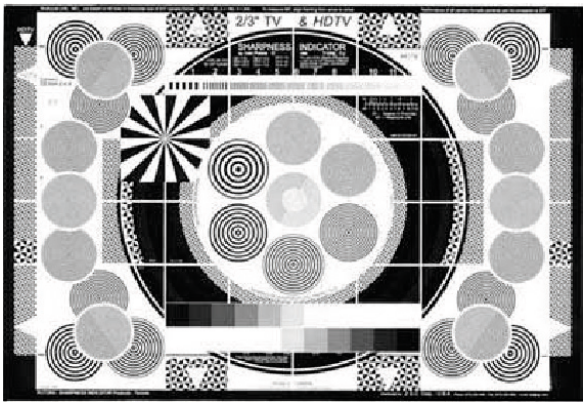
	Instruction	Explanatory Notes
1	Mount a film lens to the Image Converter.	Select a mid range film lens; around 50 mm.
2	Place a focus chart at a reasonable distance and set the focus of the film lens at that distance.	
2.1	Turn the Image Converter ON. Open the adjustable ND FILTER to Position 0.	
2.2	Close the iris of the film lens to around T4.	
2.3	Unscrew the lever, marked ⑧ in the photo. Turn the ring to adjust for best sharpness.	
2.4	Tighten lever ⑧. The PRO35 Image Converter is precisely adjusted for the camera.	Use a good quality monitor to evaluate the picture.

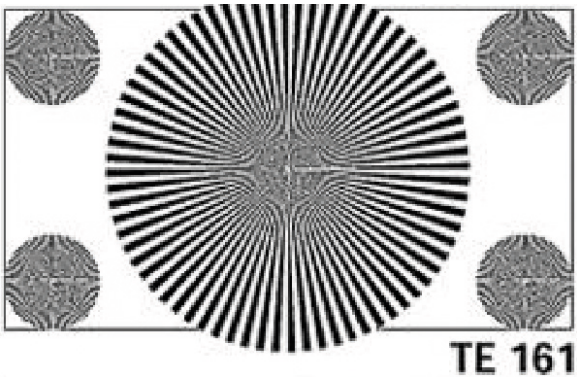
2. Adjusting flange focal distance in the field:

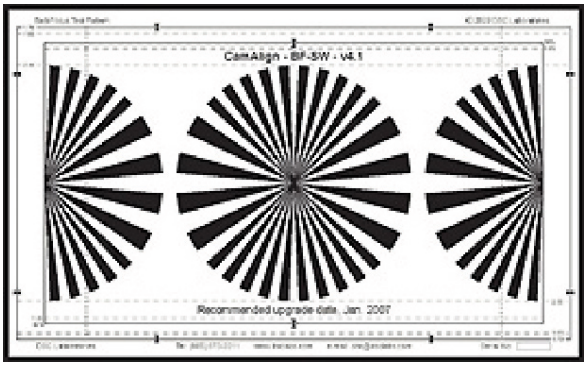
Rule of thumb: If you are seeing the structure of the target glass clearly sharp while having switched off the Image Converter (OFF), the flange focal distance is correctly adjusted.

	Instruction	Explanatory Notes
1	Mount a film lens to the PRO35.	Select a mid range film lens (around 50 mm)
2	Use a white chart.	Set a white chart at a reasonable distance to fill the image.
2.1	Turn the PRO35 unit OFF. Open the adjustable “ND filter” to Position 0.	
2.2	Close the iris of the film lens far enough to allow the video camera to show the grain pattern of the target glass.	
2.3	Unscrew lever ⑧ (shown labelled in photo), and turn the ring to adjust the sharpness. Tighten lever ⑧.	
2.4	When the grain pattern is sharp, the PRO35 is precisely adjusted for the camera.	

Example for test charts



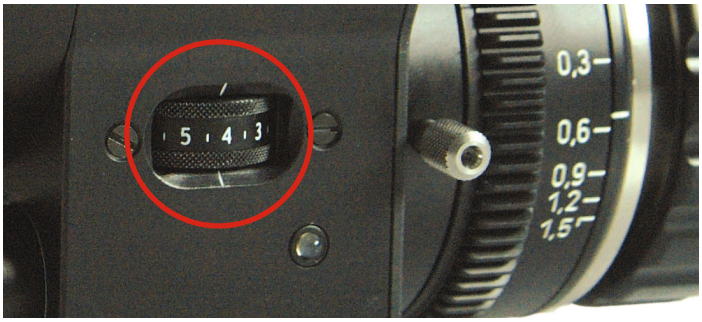




Test charts to control the back focus are available from P+S Technik, or:

- **ZGC (Putora)**
  http://www.zgc.com/zgc.nsf/product/putora
- **Image Engineering (Esser)**
  http://digitalkamera.image-engineering.de/index.php/Produkte/Testcharts
- **DSC-Labs**
  http://dsclabs.com/resolution.htm

2.3.3 Adjustment wheel for target speed:



Next to the RUN LED is the adjustment wheel for regulation of the speed of the oscillating target.

What is the "Target"?

The target is an element out of glass inside the Image Converter, which is located at the position of the image plane of the PRO35. Often described misleadingly as focusing screen or ground glass, it fulfils a similar function in the unit. It displays the picture, which is projected from the lens.

The equivalent depth-of-field effect of 35 mm film is achieved only because of the special composition of the target surface and the physical size of the displayed picture.

Without the target glass the Image Converter would only be a 'relays lens'. The angle of view would be displayed correctly to the camera, but the depth of field would be identical to "normal" lenses for this camera.

Because of the motion of the target (motion blur) the structure of the glass surface is blurred; but it is visible when the Image Converter is switched of. Depending on different factors (see chart) it can be worked with lower or it must be worked with medium speed.

Low speed	**Medium / high speed**
Possible in case of low-resolution cameras	Necessary in case of high-resolution cameras
Possible in case of long exposure time	Necessary in case of shorter exposure time
Possible in case of long range lenses	Necessary in case of short range lenses
Possible in case of open aperture	Necessary in case of dimmed or light-weak lenses
+ very quiet	– maybe louder operating noise

IMPORTANT: The adequate adjustment of the target speed has to be tested BEFORE shooting. The evaluation should be done with a high quality monitor with a resolution analogue to the camera's resolution.

WHEN is it necessary to adjust the target speed?

–In case of changing the camera
–In case of modification of exposure time / frame rate
–In case of working under extreme circumstances, e. g. low temperature.

How do I adjust the "right" target speed?

Tip 1: In order to achieve best results, please follow these rules of thumb:

- If possible work with open lens aperture.
  A low depth of field reduces the risk of a visible target and leads to the desired typical look of the 35 mm film picture.
  The second aperture or the optical filter is helpful for the correct exposure.

- Use common exposure times like 1/48 s., 1/50 s., and 1/60 s..
  The shorter the exposure time, the sharper the display on the target glass.
  (it reduces the motion blur!)

We assume that a not visible target glass guarantees ideal results. A lot of user use the target speed in a creative way and add to the picture intentionally grain e. g. by running the target in extremely slow speed.
This is especially in case of high-resolution or highly compressed shooting systems only after intensive tests advisable, because the above named effect can influence the actually recorded picture in a negative way. (Results are often clearly visible compression artefacts in the recorded material). This is only ONE of the possibilities of the adjustment; a lot of users have surely developed their own way.

Tip 2: A practical alternative for adjusting the correct target speed (especially for high-resolution cameras) is to synchronize the target with the electronically shutter of the camera. Here the resulting artefacts are made visible first with the help of a high-resolution monitor and then the ideal adjustment of the speed is worked out.
A maximum speed is NOT always ideal. Similar to the adjustment of a running film camera to the flickering of a monitor, ONLY a speed for the set exposure time / frame rate is appropriate.

1. Focus the camera on a constantly lit surface (this can be for example grey or coloured). Light preferably for a high aperture, e. g. 16/22; do not overexpose.

2. Check flange focal distance and exposure time.
   Set the controller of the target speed on a low value and start the PRO35.

3. Close the iris of the front lens until you can see movement artefacts between target and shutter on the monitor.

4. Increase the speed as long as the structure stops (in synchronization with shutter) – the structure is “frozen”.
   You are going to realize that countervailing artefacts become visible in case of a further increment of the speed.

5. Note / mark the best possible setting of the speed and re-open the aperture for the “normal” shooting.

Like this you are able to minimize eventually appearing artefacts, because even at a high aperture value (and a high depth of field) only stopped structures (converter OFF) become visible and not moving ones.

PRO35 Image Converter MK II

Compared to the “classic” PRO35 Image Converter the drive system and the noise insulation have been optimized.
This means that the maximum speed has been considerably increased at a constant maximum noise level and offers now an enlarged interval for adjusting high frame rate / short exposure time. (Other improvements in electronic (Re-Design), mechanical components (among other things optimized synchronization) and cable connection has been made)

+++ All previous PRO35 Image Converters can be upgraded to MK II, for that purpose contact P+S Technik or your local distributor.+++

2.3.4 Second iris diaphragm “continuous ND-Filter”:

In the practical handling with the PRO35 Image Converter, the aperture of the utilized lens is mainly used for the definition of the desired depth of field. The real exposure of the camera results – like in classical film productions – from light setup, from optical filters (in front of the lens as well as internal ND-Filter) and / or from the utilization of the second iris diaphragm:

Right in front of the camera there is the second iris diaphragm. It is engraved with ND (neutral density) marks, in order to make a correct exposure calculation comparable to an ND filter.

IMPORTANT: The visual depth of field does NOT change by using the second iris diaphragm! Another aperture, which is located behind the second iris diaphragm, is only a kind of light valve, because of the projection of the picture on the target. Consequently a precise control of exposure is possible anytime. If the exposure trough an external servo-system is desired, the aperture flange of the PRO35 is equipped with a geared ring.

Tip: Mask the working aperture during the first days of production. Like this you get used to the exposure correction with the second diaphragm.

Loss of light:

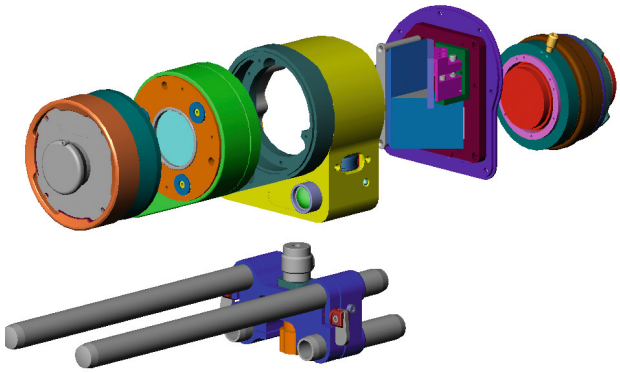
Beside the target, the PRO35 Image converter has also other optical elements. An explicit description would go beyond the scope of this manual. Therefore there should only be named the main components:

1. Safety glass in front of the “target” (avoids permeation of dirt particles into the Image Converter

2. Target glass – see above. This is at the same time the image plane (white engraving on the body)

3. Prism block: Makes an optical adjustment of the image position possible (side-inverted projection of the lens on the target). Therefore also old cameras can be used unlimited with the Image Converter – the image is always projected correctly.

4. Adjustment lenses and second iris diaphragm: the rear part of the converter includes an intermediate lens which scales down the 35 mm image projected on the target to the size of the camera’s CCD (2/3" or 1/2") and corrects the light beam for the three focal planes (red, green and blue) of the video cameras. Apart from this the intermediate lens includes the back focus adjustment ring (see chapter above) and the second iris diaphragm (see chapter above)



Naturally lenses NEVER work without loss of light. Also the optical system inside the three-chip camera (prism) is often limited to maximum F1.4. Approximately 1 aperture is lost because of the projection of the picture onto the target glass and the other optical components. The maximum aperture of the lens used has to be considered as well. Therefore check BEFORE shooting the loss of light resulting from your precise configuration of lens and camera.

2.4 Adjusting the Camera:

Every lens has its own individual optical characteristics. This applies to all film, photo and video lenses. The modern electronic camera is preset ex factory for the established video lenses. Strictly speaking for every used lens on the camera there should be a separate adjustment. To make this possible – at least in a theoretical way – most of the manufacturers work with so called lens files. Ideally all information regarding the lens (among others colour shading) can be saved in these lens files. However in practice there is often worked with only one lens file for several lenses, because the differences between the lenses/manufacturer are becoming less obvious.

If the P+S Technik PRO35 Image Converter is used with a professional electronic camera, it is recommended to create a separate lens file respectively an own setup for the colour shading. Otherwise a vertical colour gradient can be the result; in this case the characteristics of chosen lens file and of the PRO35 Image Converter are too different (incl. the used lens).

2.4.1 Creation of lens files (colour shading):

The colour shading of electronic cameras should only be adjusted by qualified service personnel. Your service partner can surely help you. If you are renting the Image Converter, please ask the rental house for presets for the equipment combination. If you are in need of support on the film location, the D.I.T. (Digital Imaging Technician) can make relevant adjustments.

Generally a lens file for each “kind” of lens is created.
For example a file for the PRO35 Image Converter with Cooke™ fixed focal distance Type S4 lenses and a file for the PRO35 Image Converter with Zeiss™ fixed focal distance Type UP lenses.

Lens files can / should normally NOT be transferred from one camera to another and have to be adjusted individually for each camera. Many camera manufacturers offer an automatic colour shading alignment; also the creation of lens files is described in the camera manuals.

Exception:
If you are recording on a system based on raw data or if you want to use for example the Filmstream™ process of the Thomson VIPER™ camera, there are often no more possibilities of adjusting the shading in the cameras. In this case any adjustment of the shot pictures can be made in the post production. There exist often appropriate tools for the adjustment. As the case may be, it can be helpful to do some shots of white surfaces before the shooting, in order to create masks for the adjustment in the postproduction.

The following instruction can only be seen as a guideline. Please check the user manual of the used camera!

P+S Technik does not issue guarantee for the correctness of the following information and assumes experience in the adjustment of cameras:

Equipment:
- White, homogeneous surface (ideally use the so called Illuminator* or a Ulbricht-bowl)
- Waveform monitor / Vectorscope or Oscilloscope (depends on type of camera HD / SD)
- High resolution monitor (depends on type of camera HD / SD)

1. Point your camera on a equally lit WHITE surface.
   Open the aperture of the film lens and the second aperture of the PRO35 converter up to the MAXIMUM.
   Light the surface until a luminance of 80 % on the Waveform monitor is reached.
   Check the homogeneity of your illumination with the Waveform indication (straight lines) and eliminate stray light.

2. Make a white fader.
   Check this with the help of the Vectorscope (if possible not coloured).

3. On the monitor: Set the controller for CHROMA on MAXIMUM and the controller for CONTRAST on as high as possible

4. If the adjustment of the colour shading is necessary, you see:
   a. On the monitor a coloured sequence, often cyan/magenta (green on the bottom, red at the top)
   b. At the Vectorscope not a 100 % uncoloured indication
   c. At the Waveform-monitor in the Parade-display over VERTICAL inclined or parabolic amplitudes

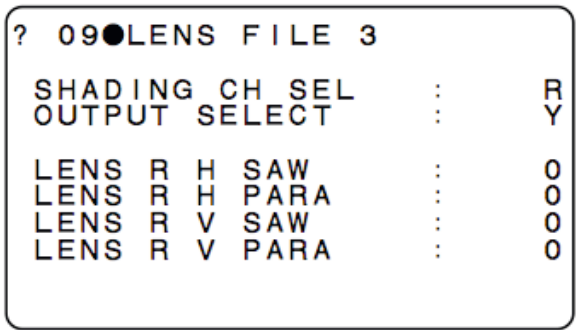
5. Adjust with the help of the user manual of the camera manufacturer the parameters in the area of WHITE SHADING (or automatically or manually),
   V SAW and V PARA in every colour channel (starting with green) as long as:
   a. The Vectorscope shows clearly uncoloured (increase if necessary the display).
   b. At the Waveform-monitor in the Parade-display over VERTICAL for every colour channel straight lines are displayed.
      If necessary repeat these steps also in the HORIZONTAL display with the adjustments H SAW and H PARA (the terms can vary at different camera manufacturers).

6. Save the adjustments like described in the manual of the camera manufacturer.
   Ideally these modifications are saved in a lens file and easily callable in case of changing the lens to the PRO35 Image Converter.
   Please ☞ that not every camera has the functionality of lens-files. In this case contact your service engineer.

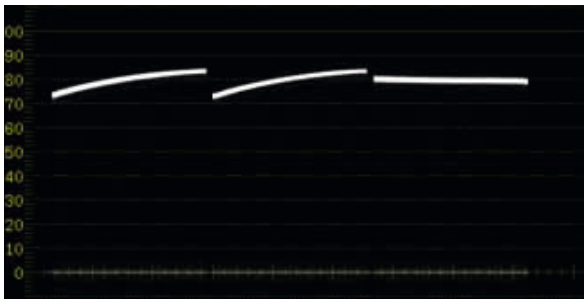
Older camera types allow the colour shading adjustment only over the task V-MOD. In this case please contact your service partner or the manufacturer / dealer.

* Among others illuminators are offered from the following manufacturer:
DSC-Labs: http://dsclabs.com/ambi_illuminators.htm
Image Engineering: http://digitalkamera.image-engineering.de/index.php/Produkte/Testcharts/Illuminators

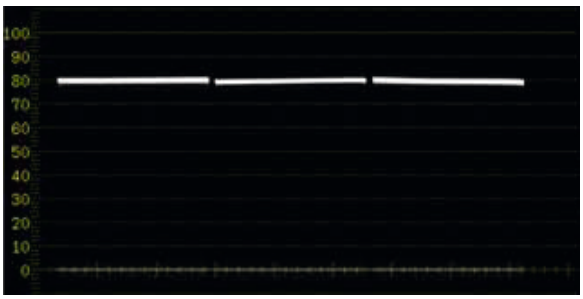
EXAMPLE: Shading adjustment on a Sony camera:



Menu of Sony HDW-F900R



Parade display Waveform monitor in case of uncorrected colour shading



Parade display Waveform-Monitor with already corrected colour shading

3. Tips and General Instruction:

Film-Look: Which elements are important?

– **Framerate:**
Film works only with complete pictures, that means progressive with 24 or 25 Hz. Television systems work currently for the most part with half pictures (interlaced), that means with 50 or 60 Hz.
The higher the frame rate, the higher is also the motion resolution.
A football game with “only” 24 Hz would not be as informative for the viewer as football game with 50 Hz.

– **Exposure time:**
The common shutter speed result for film cameras result normally from the frame rate. This is mostly 1/48 s., 1/50 s. or 1/60 s., some applications request a shorter exposure time. Electronic cameras work generally in the same manner, but the consolidation between frame rate and exposure time is not as steep. This means at for example 60 frames per second there is also a longer exposure time possible (up to 360 degrees Hell sector = 1/60 s.)

– **Motion blur:**
One characteristic of the so called film look is the motion blur.
Low frame rate / long exposure time lead to a higher motion blur compared to television - benefit from this creative tool.

– **Shutter effect / strobing:**
Is your pan jerky? Probably your pan velocity is not adjusted to your frame rate (and your motion blur). Check the pan velocity against the focal distance, e. g. in the manual of the ASC (American Society of Cinematographers).
Also newer monitors show the pictures often “jerky”. Chose your equipment accordingly to your reporting (TV/cinema) and your method of recording (interlaced/progressive).

– **Method of recording:**
INTERLACED is still a widespread method for increasing the motion resolution (50/60 Hz). Use this method creatively, e. g. for a later slow motion (Example: convert 50/60 Hz interlaced to 50/60 Hz progressive, afterwards rendering with 24/25 frames/s.). De-interlaced is often used for the print out.
PROGRESSIVE is used for printing out the material; this is often more close to the film look, because of a lower motion resolution (24/25 Hz).

– **Compression:**
Unfortunately the recording quality is highly dependent on the format of recording. A lot of today’s used data compression programs are for example highly sensitive to noise or quickly changing picture contents. While recording do not only trust your picture on the monitor (it shows often the uncompressed signal), but test how the recorded signal is behaving in different recording situations (see also: TARGET SPEED above).

– **Depth of field:**
  Like the human eye has a selective perception, also filmmakers and cinematographers use the depth of field for calling the attention of the viewer to specific things or also to detract from something.

  At the same time the effective size of the picture plays an important part: The larger it is, the lower is the depth of field; small amateur cameras work often with very small sensors and that's why their picture comes across as unnaturally sharp. The P+S Technik Image Converter allow now the identical depth of field like in 35 mm film on an electronic camera with a considerably smaller size of the sensor.

– **Choice of lens:**
  The choice of lens is - especially in combination with high-resolution cameras - clearly visible. Therefore test the lenses before shooting! See a list with applicable lenses in the annex.

– **Aspect ratio:**
  Because of the fact that the human eye has a considerably larger horizontal field of vision than a vertical one, a lot of films used already very early an analogous larger aspect ratio for achieving an impressively large screen projection (Example: Cinemascope).
  Like this a different visual effect is produced for the viewer only because of the picture size.

4. Maintenance:

Generally the P+S Technik Image Converter are designed to a maintenance-free use on the shooting location. But because of the number of mechanical components service is required from time to time. This concerns especially the regular cleaning of the unit.
Like in classical film, the cleaning at the shooting location is limited on keeping clean the optical unit, which means the safety glass inside the Image Converter and the back-lens of the system.

Please use only appropriate material for blowing out and use cleaner only in case of stubborn dirt.

Find detailed instructions regarding the cleaning in the separate service manual of the Image Converter.

P+S Technik offers workshops for technicians, which explain the service in detail. Please contact **info@pstechnik.de**.

5. Technical Data

Please find all details concerning techniques as well as detailed pin-configuration of the connector and the circuit diagram in the separate service manual of the Image Converter.

	2/3" Version	1/2" Version
PRO35 Camera Mount (Image Converter for camera)	B4 Mount	Sony Bayonet Mount
PRO35 Lens Mount (Image Converter for camera)	PL Mount	PL Mount
Setting of the Image Converter	Back Focus	Back Focus
Length of the Image Converter	162 mm / 6.38 in	208 mm / 8.19 in
Weight	1700 grams / 3.74 lbs	2500 grams / 5.51 lbs
Image position	upstanding emulsion side up	upstanding emulsion side up
PRO35 aperture (behind the lens)	integrated for reducing light (no effect on depth of field)	integrated for reducing light (no effect on depth of field)
Power consumption	300 mA	300 mA
Power supply	over lens connector cable (included in delivery)	over lens connector cable (included in delivery)
Image target frequency, eccentric	Variable velocity	Variable velocity
Temperature	0° – 50 °C	0° – 50 °C

6. FAQ:

1. **Do I have to send my camera to P+S Technik to do some mechanical or electronic changes before I can use the PRO35 Image Converter?**
   No, there is no need for any modifications, therefore there is no need to send the camera to us.

2. **How does the PRO35 work?**
   The basic principle: The PRO35 achieves a mechanical and optical adaptation of 35 mm film lenses to any commercially available 2/3" broadcast video camera (Standard and High Definition) with a Sony B4-Mount.
   How does the PRO35 works: The chip size (image field) of your 2/3" - camera is artificially enlarged by an intermediate projection, therefore transferring the 35 mm lens characteristics (e.g. angle of view and depth of field) to the video camera.
   The deciding point is the two stage configuration: The image, drafted by the film lens is projected onto an oscillating ground glass, called target. This target is in the same position, as the film plane in a 35 mm film camera. For this reason the scale of reproduction, as well as depth of field and angle of view show the “film like quality”, similar to a 35 mm film camera. In a second step this real image is resized and projected onto the CCD - video chip. Since this is just a linear squeeze of a two-dimensional image all optical characteristics like depth of field and angle of view stay the same. This means that the video chip is not the place of image creation (this is the target!), but of image recording.

3. **What do I basically need for a complete PRO35 Image Converter solution?**
   The PRO35 is delivered by default with a Sony B4-Mount camera sided, a ARRI PL-Mount lens sided and a light weight support system. Therefore you just need the PRO35 Image Converter for a complete PRO35 solution.
   We explicitly recommend the use of a remote switch in order to guarantee an easily operated start and stop of both, camera and Image Converter simultaneous. Corresponding switches are available from P+S Technik, ARRI and other suppliers.

4. **What are the additional accessories you offer?**
   Additional accessories, like different lens mounts, heavy duty support system (19 mm) and plenty of power supply cables are available.

5. **Which cameras work together with the PRO35?**
   All 2/3" B4-Mount video cameras (Standard Definition & High Definition) work together with the PRO35.

6. **Which lens mounts are available for the PRO35?**
   The following lens mounts are available for the PRO35:
   * Professional F-Mount for PRO35
   * Nikon F-Mount for PRO35
   * Canon EF Mount for PRO35
   * Canon FD Mount for PRO35
   * BNC-R Mount for PRO35

* Panavision Mount for PRO35
* Contax Mount for PRO35

Please ☞ The PRO35 mounts are not designed for quick change (like the ones for the MINI35 are). Especially after assembling a film lens mount to the PRO35 an adjustment on a collimator is necessary.

7. What does the image the PRO35 creates look like?

Basically the PRO35 makes a limited depth of field possible for 2/3" video cameras as up to now it was applicable only in connection with 35 mm film. Thereby the PRO35 enables film-makers to use limited depth of field as another creative instrument for shooting on video. At the same time the targets structural pattern affects the image comparably to a light soft-focus and low-contrast filter and adds a film grain-like effect to it. In contrast to a textbook-perfect, hard and clean digital video, the PRO35 generates images, appearing more lively and softer. Altogether the look and feel is similar to the imagery you are used to from 35 mm film

8. What is meant by “target”?

The “target” is the core of the Image Converter. It is a grinded optical glass, similar to a ground glass, used in viewfinder systems of film cameras. The image, drafted by the film lens, is projected onto this target and in a second step captured by the CCD-chip of your video camera. In order to blur the target’s structural pattern it is set into an oscillation movement.

9. What kind of target (ground glass) is used in the PRO35?

The target, used in the PRO35, is a specially grinded optical glass, that minimizes light loss.

10. Can I edit the same way?

Yes. You can edit the same way you are used to.

11. Is there a light loss using the PRO35?

Yes, for the PRO35 you can assume a light loss of 1.5 stops. Since the light loss is not linear this is the “worst case” value.

12. How do I get started?

Since shooting with the PRO35 is similar to shooting with film, we recommend to test the complete setup in detail in order to familiarize with your Image Converter and its specific features!

13. Is it possible to start shooting with the PRO35 right away?

Yes, this is possible, but since shooting with the PRO35 is similar to shooting with film, we recommend to test the complete setup in detail in order to familiarize with your new Image Converter and its specific features! Please mind the necessity of Back focus and Colour Shading adjustment.

14. Do I need a power supply for the PRO35?

Yes, you need a power supply to run the motor of the PRO35 for the oscillation of the target. The PRO35 is delivered by default with a power supply cable for the lens connector (Hirose 12-pin/ Fischer 7-pin) on the camera. This allows you to use the same battery for the PRO35, you run your camera with. Over and above plenty of alternative power supply cables are available to use different power and battery systems (i.e. with Anton Bauer, Digibeta Hirose or XLR connectors). For further information please refer to our Price list.

15. Why is there an ON/Off switch on the PRO35 Image Converter?

As specified in FAQ [How does the PRO work] the image generated by the 35 mm front lens is projected in a first step onto a ground glass-like target. In a second step this image is resized by a relay lens system to the smaller-sized video chip. The target itself carries a structural pattern to visualize the image created by the front lens. If the target is motionless, this pattern is stamped on the image and appears like some kind of dirt on the lens.

In order to blur this structural pattern the Image Converter has to be switched on. The target starts oscillating whereby the structural pattern appears in a film grain-like manner.

16. Why is there a speed control on the PRO35 Image Converter?

As specified in FAQ [how does the PRO work] the image generated by the 35 mm front lens is projected in a first step onto a ground glass-like target. In a second step this image is resized by a relay lens system to the smaller-sized video chip.

The target itself carries a structural pattern to visualize the image created by the front lens. If the target is motionless, this pattern is stamped on the image and appears like some kind of dirty on the lens.

In order to blur this structural pattern the target is set into an oscillating movement, whereby the structural pattern appears in a film grain-like manner.

The speed control now diversifies the target's oscillation frequency. This provides the opportunity to eliminate disturbances or interferences caused by high shutter speeds or to achieve different grain effects, also depending upon the iris opening of the front lens.

17. How to adjust the target's oscillation speed?

For information on the adjustment of the target's oscillation speed please consult chapter 2.3.3.

18. What is the iris in front of the B4-Mount of the Image Converter for?

The PRO35 is equipped with an iris. However this iris only serves to light reduction. This offers the opportunity to shoot in bright environments with a wide opened front lens aperture (in order to obtain a narrow depth of field) without overexposing the video cameras CCD-chip. Therefore the Image Converter's iris is comparable to a variable ND function. But there is no influence on depth of field, because the light source, relating to this iris is no three-dimensional environment, but the two-dimensional image on the target, which obtains just one focus plane.

That is why the depth of field isn't influenced by the Image Converter's iris.

In summary: For a camera setup with the PRO35 Image Converter the aperture of the

front lens serves to adjust the images depth of field; the iris of the Image Converter only serves to adjust exposure.

19. **How does the user adjusts the exposure (without affecting the depth of field)?**
In order to control exposure (i.e. when light is too intense like in bright daylight) without affecting the depth of field we recommend to use the iris of the Image Converter.
If this ND function is insufficient and the image remains overexposed, closing the film lens iris may not offer the required limited depth of field or may project too much grain on the video image. Two possible remedies:
1) Use the ND function of your video camera or
2) Use a ND filter in front of the film/photo lens to decrease the light entering the system
We do not recommend to increase the shutter speed of the camera in order to control exposure. In this case please consider, that the visibility of the targe'ts structural pattern changes and might cause disturbance or interferences in your image. Although it's possible to eliminate these interferences by adjusting the speed control of the target.

20. **Is it possible to adjust exposure by the camera's shutter speed? What is to be considered in this case?**
When decreasing the shutter speed of your camera in order to control exposure please consider, that the visibility of the target's structural pattern changes and might cause disturbance or interferences in your image.

21. **What is to be considered when shooting with variable frame rates (i.e. Panasonic "Varicam")?**
When decreasing the shutter speed of your camera in order to shoot at variable (higher) frame rates, please consider, that the visibility of the target's structural pattern changes and might cause disturbance or interferences in your image. By adjusting the target's speed control it is possible to eliminate these interferences.

22. **Why is it not recommended to adjust exposure by stopping down the front lens aperture?**
There are different reasons:
1) The higher the T-stop (T4.0 or higher i.e. T11), the more apparent the grain effect will be. The other way around: the lower the T-stop (T4.0 or lower i.e. T1.2), the less apparent the grain effect will be.
2) When closing the front lens aperture more than about 2.5 stops, the depth of field is comparable to a normal video lens. In this case it makes no sense shooting with the PRO35 and film lenses. In order to control exposure it is more advantageous to use the Image Converter's or the camera's ND function.

23. **When testing different shutter speeds I realised that at 1/100 sec the structural pattern of the target becomes apparent. Which shutter speed do you recommend?**
We recommend to use standard shutter speeds with the current version of the PRO35.

24. When stopping down the aperture of the front lens at T4.0 or further, the structural pattern of the target becomes apparent. How can I avoid this pattern to appear on my imagery?

In order to control exposure (i.e. when light is too intense like in bright daylight) without affecting the depth of field, we recommend to use the iris of the Image Converter.
If this ND function is insufficient and the image remains overexposed, closing the film lens iris may not offer the required limited depth of field or may project too much grain on the video image. Two possible remedies:
1) Use the ND filter of your video camera or
2) Use a ND filter in front of the film/photo lens to decrease the light entering the system
We do not recommend to increase the shutter speed of the camera in order to control exposure. In this case please consider, that the visibility of the target's structural pattern changes and might cause disturbance or interferences in your image. Although is possible to eliminate these interferences by adjusting the speed control of the target.

25. Is it possible to use the whole tolerance of the film lens aperture together with the PRO35?

We advise not to use the whole tolerance of the film lens aperture together with the PRO35. Stopping down the aperture of the front lens at T4.0 or further unveils the structural pattern of the target. In order to control exposure (i.e. when light is too intense like in bright daylight) without affecting the depth of field, we recommend to use the Image Converter's iris.

26. What is the highest aperture stop I can use without getting grain from the target?

We recommend to avoid stopping down the front lens aperture further than T4.0.

27. I have got a colour gradient from top to bottom in my video image. What is it and what shall I do?

This is so called "colour shading", a gradual shift of the colour in upright direction due to a mismatch of the lens system and the electronic system of the camera. To get further information on this phenomenon and how to eliminate it, please refer to chapter 2.4.1.

28. The distances engraved on the film lens's focus ring do not match to the measured distances to focused objects. Is it due to a back focus displacement?

Yes. You have to adjust the back focus at the Image Converter.

29. How do I create a clean image?

For creation of a clean image please consider the following items:
* Back focus adjustment
* Colour Shading adjustment
* adjust the target's oscillation speed
* control the camera's shutter speed
* do not stop down the front lens further than T4.0
* Try setting the camera to manual mode and limit the gain to 0 db or even –3 db

30. Which support systems am I supposed to use with the PRO35?

* by default the PRO35 is delivered with a 15 mm light weight support system, including the required support bridge and two 15 mm rods.
Please ☞ to connect this leight weight support system to your 2/3" video camera you need a bottom plate, prepared for light weight support!
* for heavy duty support with the PRO35 please refer to chapter 1.2 (page 8 following)

31. Why do I need a support system?

* In order to stabilize your setup and take weight of the video camera's B4 mount.
* offers the possibility to connect accessories like matte box or follow focus to your PRO35 setup

32. Which lenses can be used together with the PRO35?

You can use all available film lenses with PL-Mount, able to expose the N35 Academy format (22 mm x 16 mm):
* Zeiss Master Primes (T1.3)
* Zeiss Ultra Primes (T1.9-T2.8)
* Zeiss Super Speed Lenses (T1.3)
* Cook S4
* Cook S4 Zoom T2 15-40 mm
* Cook Zoom T3 18m-100 mm
* Angenieux Optimo Zooms
* Zeiss Distagon: (focal length 85 mm or more!)

⚠ Zoom lenses and Zeiss Distagon lenses might cause vignetting. These lenses should be tested before shooting individually!
Furthermore the following lens mounts are available and can be used with the corresponding lenses:
* Professional F-Mount for PRO35
* Nikon F-Mount for PRO35
* Canon EF Mount for PRO35
* Canon FD Mount for PRO35
* BNC-R Mount for PRO35
* Panavision Mount for PRO35
* Contax Mount for PRO35

33. Which lenses do you recommend to use and why?

The following lenses work perfectly with the PRO35:
* Zeiss Master Primes
* Zeiss HS Primes
* Cook S4
* Zeiss Ultra Primes

You always have to keep in mind, that you have a light loss of 1.5 stops with the PRO35. The faster the lens, the more light is left for exposure! Over and above a wide opened front aperture creates a smaller depth of field.

34. Is it true that I have to use High Speed Prime lenses with the PRO35 and not the Standard Speeds?

No, it is not true that you have to use Zeiss High Speed primes. The advantage of the HS lenses is the fact, that with a T 1.3 the HS lenses have a bigger aperture and accordingly a smaller depth of field than standard speed lenses. Although you can use other lenses, i.e. Ultra Primes or photo lenses: It is important to check each lens before shooting, because you never know what could happen. That is what camera assistants do before shooting with film cameras and it should be the same before shooting with a PRO35 and film or photo lenses.

35. Is it possible to use 16 mm film lenses with the PRO35?

The PRO35 is developed for the use with 35 mm film lenses, that expose the whole N35 Academy format. Since 16 mm lenses are styled for smaller frame sizes, vignetting problems may occur. As a rough guide 16 mm lenses, whose rear lens is as large as a one Euro coin should work. But if you decide to use 16 mm lenses, please test it before shooting!

36. Does the focal length of the lens I'm using change?

No, the focal length of the lens does not change. It stays the same!

37. Is the angle of view of the film lenses I'm using affected by the Image Converter?

Neither the focus length nor the angle of view is affected by your Image Converter.
For all 35 mm film lenses the image properties comply with the properties of a N35 film camera.
For further understanding: In principle every 35 mm film lens draws a round image onto the film gate of a film camera (most 35 mm film lenses draw an image diameter of 30 mm in order to expose S35 formats as well as N35 formats, although a diameter of 27,2 mm suffices to expose the N35 formats). This film gate or an accordant format mask cuts out the framing as desired.For the PRO35 it's nearly the same: The fore part of the Image Converter is designed simular to a N35 film camera
The film lens draws a round image onto the Image Converter's target, which is in the same position as the film stock in a film camera. In a second step a 27,2 mm image circle (remember: this is satisfactory for N35 formats!) is then squeezed to the diameter/diagonal (11 mm) of the 2/3" CCD-chip. The CCD-chip then serves as a quasi format mask and cuts out the framing according to the CCDs size. In conclusion it is to say that the CCD-chip defines, what is recorded by the video camera!

38. Is the focal length or the angle of view of the photo lenses I'm using affected by the Image Converter?

The focal length of your photo lenses is not affected by the PRO35.
Stills Photographers: Compared to still photography the angle of view changes (gets smaller!).
Cinematographers: If you are used to shoot on film lenses, you can handle a photo lens the same way like a film lens. I.e.: on the PRO35 the angle of view (as well as the focal length and depth of field) of a 50 mm photo lens is the same as of a 50 mm film lens! Differences remain in order to the handling (i.e. focus).

39. How can I translate focal length for PRO35 in order to achieve similar angles of view compared to 35 mm film, still photography and 2/3" video?

In order to achieve same angles of view with the PRO35 please use the following factors starting from

* 2/3" video; 4:3 [Standard lens: 13 mm]: Factor: 2,4
* N35 film 4:3 [Standard lens: 32 mm]: Factor: 1
* 2/3" video; 1:1,78 [Standard lens: 11 mm]: Factor: 2,3
* N35 film; 1:1,78 [Standard lens: 25 mm]: Factor: 1
* Stills Photography full format [Standard lens: 48 mm]: Factor 0,67

Please ☞ The standard focal lengths are based on a vertical visual angle of 28°

40. Is there a disadvantage between shooting with zoom lenses and shooting with prime lenses regarding the lens speed?

Yes, the disadvantage is the speed of the different lens types. Due to the optical design of zoom lenses you usually get less light through a zoom lens to the chip, compared to a prime lens. The loss of light can be handled by opening the lens's iris or putting up more light sources. We recommend to use prime lenses, because you always have to keep in mind, that there's a light loss of 1.5 stops with the PRO35. The faster the lens, the more light is left for exposure! Over and above a wide opened aperture creates a smaller depth of field.

41. What focal length will we get using Nikkor 15 mm?

It will be also 15 mm! But please ☞ The angle of view will change in comparison to 35 mm still photography.

42. Regarding stills lenses: does any of the manufacturers you support provide sets of prime lenses or do they all tend to go for the zoom lenses?

They do both, zoom lenses and prime lenses. But Nikon seems to be the only manufacturer that still produces photo lenses with real mechanic focus adjustment. Other lenses are manufactured with auto focus function which is of no use with our products. But it is possible to find used prime lens sets in very good condition of Canon and other lens manufacturers.

43. Will we have aberration of the image or any problems with black edges (vignetting)?

No, if you use recommended lenses you won't have any such problems! If you use other lenses please test them before shooting!

44. Is it possible to use a PRO35 between a complete series of Nikon 35 mm photo lenses (20,28,35,50,80,180 mm) and a Sony HDCAM 750?

Yes, this is possible!

45. The PRO35 does not start ? What can I do?

Background: The PRO35 starts when the VTR signal goes to LOW Level on the lens connector (tested on Digibeta, Beta SP and Panasonic). Some cameras do not go to LOW Level when pushing the VTR button. We do not know whether this is a typical problem for a certain camera model or only for some single cameras.
Solution: Connect a remote switch (like “RS switch” (#20499) from P+S Technik) to the PRO35 Image Converter (3-pin Fischer). Then you can start the camera (VTR) and the PRO35 simultaneously. This is the method preferred by most DPs. Alternative switches are available from ARRI (“RS-4”) and other suppliers.

46. Can I replace the target (ground glass) of the PRO35 if it is broken?

Yes, it is possible to replace the target. There are two possibilities:
1) You can send us the broken Image Converter and we replace the target for you.
2) You can order a new target and replace it on your own. In this case the warranty expires.

47. Is there any place other than Germany where I can buy this equipment?

We have several local dealers. You can download the actual listing from our website

7. List of Suitable Lenses for PRO35

Which lenses can be used with the PRO35 and the Mini35 ?

All standard film lenses with PL mount, that project 35 mm Academy format (22 mm x 16 mm):

* Zeiss Master Primes (T1.3)
* Zeiss Ultra Primes (T1.9-T2.8)
* Zeiss Super Speed Lenses (T1.3)
* Cook S4
* Cook S4 Zoom T2 15-40 mm
* Cook Zoom T3 18 m-100 mm
* Angenieux Optimo Zooms
* Zeiss Distagon: (focal length over 85 mm !)

⚠ Zoom lenses and Zeiss Distagon lenses might have vignetting problems.
These lenses should be individually tested before shooting!

Additionally we offer the following mounts for the Mini35 (P+S Technik interchangeable mount system) and the PRO35 (small mechanical change) a wider choice of lenses:

* Panavision Mount
* Nikon Mount
* Canon EF Mount
* Contax Mount
* BNC-R Mount
* Leica Mount (only for MINI35)

8. Addresses and Contacts

P+S Technik GmbH

Professional Cine Equipment Manufacturer

Postal address:
Siemensstraße 12
85521 Ottobrunn
GERMANY

Phone: +49 (0)89 45 09 82 30
Fax: +49 (0)89 45 09 82 40

Email contact:
info@pstechnik.de

Website:
www.pstechnik.de

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